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### Privacy, Personal Data Collection and the Freemium Business Model for Web 2.0

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### METHODS

Method	Why?
Desk Based Literature Review	To establish the current legal framework governing the tracking, mining, profiling of individuals' data and the relevance of this framework from a business model standpoint. Furthermore, to explore potential future legal and "soft law" self-regulatory approaches which may impact upon the availability and utility of current and future business models
Review of Existing Consumer Attitudes Research	To establish consumer attitudes towards privacy as a potential unique selling point and the commercial value (if any) that consumers attach towards privacy friendly approaches
Scoping Research into Mobile Application Business Models	To establish what business models currently exist within the mobile application ecosystem and to classify their revenue sources for the purposes of identifying those whose monetisation strategy is either pro-privacy or involves privacy as a unique selling point
Qualitative Case Studies	To explore in depth those case studies identified from the scoping research where privacy plays a strong role in the business model.

### TIMETABLE

	Q4-2013	Q1/2-2014	Q3/4-2014	2015
LIT. REVIEW				
CONSUMER ATTITUDE REVIEW				
APP BUSINESS MODEL REVIEW				
QUAL. RESEARCH				
JOURNAL PUBLICATIONS				
CONFERENCES				

### PROJECT CONTEXT

Web 2.0" creative platforms - including popular services and social networks such as Facebook, Google+, Twitter, YouTube, Spotify and WordPress - are vital incubator platforms for innovation. Despite user bases which can number in the hundreds of millions however a key challenge for these services has always been the development of a credible monetisation strategy: How can users be turned in revenue?



Arguably this model benefits all players in the digital economy. Services remain free for users, removing any financial barriers to access; innovative new businesses can enter the market more easily without being constrained by the pricing of existing players; and existing businesses can benefit from the user inertia that results from the lack of a cost.

Unfortunately through not all online advertising is the same. While traditional contextual advertising matches adverts to the content of the website that they will be displayed upon, recent years have seen a rapid growth in the use of a more individualised approach: online behavioural advertising (OBA). This involves the practice of targeting users with advertising on the basis of their past browsing behaviour and therefore their inferred interests. OBA has proven to be vastly more successful than contextual advertising at encouraging users to click and is increasingly becoming favoured amongst advertisers.

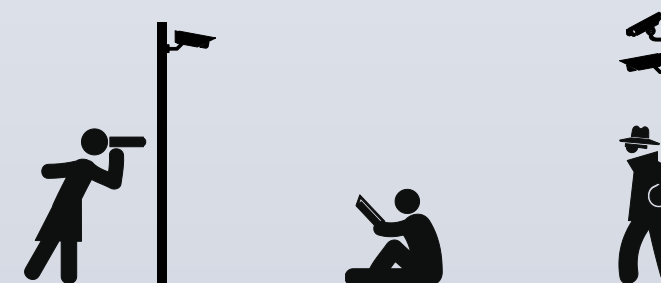
However, in order to create the type of user profile that facilitates such targeting, online providers and advertisers must first track individual users through ever more sophisticated tracking technologies, often without the user being aware of this. OBA therefore presents challenges to vital user rights like privacy while at the same time forming a core part of the economic model that enables innovative web 2.0 services to exist

There is thus a need for an economic solution that continues to foster innovation while at the same time protecting the privacy of users.

<sup>1</sup> Forecast by BIA/Kelsey. Press release available: [http://www.biakelsey.com/Company/Press-Releases/140515-U.S.-Social-Media-Advertising-Revenues-to-Reach-\\$15B-by-2018.asp](http://www.biakelsey.com/Company/Press-Releases/140515-U.S.-Social-Media-Advertising-Revenues-to-Reach-$15B-by-2018.asp)



Rather than charge for access, these services typically remain free at the point of access. The most common approach has been to finance services through an advertising model instead, in which revenue is generated by selling advertising space to third parties. This can be a lucrative approach: social media advertising revenue alone is predicted to reach US \$15 Billion by 2018<sup>1</sup>.



### PROJECT OBJECTIVES

- To examine the current legal framework that governs the tracking, mining, profiling of individuals' data
- To assess the impact on privacy of proposed reforms to the Data Protection Directive and industry "soft law" in the area of online behavioural advertising
- To explore alternate business models as potential solutions to the privacy: business conundrum (including the contemporary use of "freemium" and "bundling" models)

### RESEARCH QUESTIONS

- What competing privacy and business interests are at play when it comes to the tracking, mining, and profiling of service users?
- How has the legal data protection framework influenced or constrained contemporary business models?
- What impact might proposed legal and industry measures in the area of data protection and privacy (e.g. the General Data Protection Regulation, Do Not Track proposals) have on future business models?
- Does privacy have the potential to be a unique selling point in business models?

### DELIVERABLES AND DISSEMINATION

#### Deliverables:

- 2 x Refereed Journal Article
- 2 x Conference Presentation
- Report on research into privacy friendly business models and monetisation strategies

#### Dissemination:

- Journal article has been drafted and is currently being refined before submitting for publication
- Currently exploring potential conferences for further dissemination in 2015 (e.g. ACM Web Science 2015, Privacy Law Scholar 2015)
- Exploring the potential opportunities for a panel that would bring together key industry players, policy makers, and academics with an interest in privacy and business models.

### PROGRESS TO DATE

- Carried out a literature review exploring the current legal framework that governs the tracking, mining, profiling of individuals' data and international developments in the area of Do Not Track
- Reviewed surveys and research undertaken into consumer attitudes towards privacy
- Produced a paper outlining the findings of the initial desk-based research:
  - Technical and legal solutions to block or prohibit the tracking, profiling, and targeting of individuals are possible (although legal prohibitions appear increasingly less likely)
  - There remains a key economic problem: Advertising funds a huge number of sites, and enables innovative online businesses models that may not otherwise be viable
    - Would sites such as Facebook really have become so popular if users had to pay a subscription to access them?
  - A number of possible long-terms harms have been identified for further exploration
    - The creation of an omniscient private sector
    - Future attempts by public bodies to gain access to data gathered as part of tracking
    - Advances in identification/re-identification technologies risk the connection of tracking data with real world identities (Big Data)

- Initial draft of this paper was presented at the annual 2014 BILETA conference

### NEXT STEPS

- Finalise editing of initial journal article and submit for publication (currently in progress)
- A review of mobile applications for prevalent business models that allow for the generation of revenue in a privacy friendly way and/or which involve monetisation strategies where privacy acts as a unique selling point (currently in progress).
- The identification of potential case studies - such as types of applications or specific industry sectors - for further in depth research
- Potential qualitative case study research into the identified sectors or application types.

### KEY LITERATURE

Agarwal, L., Shrivastava, N., Jaiswal, S., & Panjwani, S. (2013) "Do not embarrass: re-examining user concerns for online tracking and advertising", *Proceedings of the Ninth Symposium on Usable Privacy and Security*, Article No. 8

Article 29 Working Party, Opinion 2/2010 on online behavioural advertising, 22 June 2010, WP 171

Article 29 Working Party, Opinion 15/2011 on the definition of consent, 13 July 2011, WP 187

Balebako, R., Marsh, A., Lin, J., Hong, J., Cranor, L. F. (2014). The Privacy and Security Behaviors of Smartphone App Developers", Available: <http://dx.doi.org/10.14722/usec.2014.23006>

Borgesius, F. Z. (2013) "Behavioral targeting: A European legal perspective", *Security & Privacy*, IEEE, 11(1), 82-85

De Lima, D., Legge, A. (2014) "The European Union's approach to online behavioural advertising: Protecting individuals or restricting business?" *Computer Law & Security Review*, 30(1), 67-74.

Fairfield, J. A. (2013) "Do-Not-Track as Default", *Nw. J. Tech. & Intell. Prop.*, 11, 575-707

Hoofnagle, C. J., Whittington, J. (2014) "Free: Accounting for the Costs of the Internet's Most Popular Price" *UCLA Law Review*, 61, 606-670

Leon, P., Ur, B., Shay, R., Wang, Y., Balebako, R., & Cranor, L. (2012) "Why Johnny can't opt out: A usability evaluation of tools to limit online behavioural advertising", *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 589-598

Lynskey, O. (2011) "Track[ing] changes: an examination of EU Regulation of online behavioural advertising through a data protection lens", *European Law Review*, 36(6), 874-886

McStay, A. (2013) "I consent: An analysis of the Cookie Directive and its implications for UK behavioral advertising", *New Media & Society*, 15(4), 596-611

Shklovski, I., Mainwaring, S. D., Skúladóttir, H. H., Borghthorsson, H. (2014) "Leakiness and creepiness in app space: perceptions of privacy and mobile app use", *Proceedings of the 32nd annual ACM conference on Human factors in computing systems*, 2347-2356

Ur, B., Leon, P. G., Cranor, L. F., Shay, R., & Wang, Y. (2012) "Smart, useful, scary, creepy: perceptions of online behavioral advertising", *Proceedings of the Eighth Symposium on Usable Privacy and Security*, Article No. 4